



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,694	06/19/2006	Juliana G. Serafin	62397A	7169
109	7590	08/27/2009		
The Dow Chemical Company Intellectual Property Section P.O. Box 1967 Midland, MI 48641-1967			EXAMINER	
			ZIMMER, ANTHONY J	
			ART UNIT	PAPER NUMBER
			1793	
MAIL DATE	DELIVERY MODE			
08/27/2009	PAPER			

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/573,694	<b>Applicant(s)</b> SERAFIN ET AL.
	<b>Examiner</b> ANTHONY J. ZIMMER	<b>Art Unit</b> 1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(o).

#### Status

1) Responsive to communication(s) filed on **24 July 2009**.  
 2a) This action is **FINAL**.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) **180-192** is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) **180-192** is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 180-192 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 180 recites "wherein the refractory solid support, exclusive of zirconium component, contains less than about 100 ppmw alkaline earth metal, measured as the alkaline earth metal oxide." There is no support for the claimed range in the disclosure as originally filed.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 180-185, 187, and 189-192 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP'442.**

In regard to claims 180, 187, and 190-192, EP'442 teaches a catalyst for the gas phase oxidation of ethylene comprising silver and a efficiency-enhancing promoter (such as alkali metals, [0029]) deposited on a 90-98.9 wt. % alpha alumina carrier (inclusive of the zirconium component, but would be slightly higher, but still overlapping the range of the claim(s), i.e. at least 99%, when the zirconium component is excluded) that can contain 0.1-5 % zirconium silicate when zirconium silicate is used as the silicon component and/or 1-5% when used as the zirconium component. See [0020]-[0022]. This amount is considered an amount sufficient to enhance at least one of catalyst activity, efficiency, and stability. Further, the zirconium component would be

substantially present as zirconium silicate because the calcination temperatures used (1300-1500°C, [0026]) are below the temperature of decomposition of zirconium silicate to zirconia (1540°C). See instant application page 8, lines 27-29.

In regard to claims 181-183, EP'442 teaches 1-30%. See [0037]. Overlapping ranges are *prima facie* obviousness. See MPEP 2144.05.

In regard to claims 184-185, EP'442 teaches alkali metals such as cesium which is recited on instant page 10 as being part of a redox-half reaction pair. See [0037].

In regard to claim 189, EP'442 teaches a surface area of 0.1-10 m<sup>2</sup>/g and a pore diameter of 0.1-5 microns. Overlapping ranges are *prima facie* obviousness. See MPEP 2144.05. EP'442 is silent in regard to the pore volume, however the products appear to be the same as they have the same properties, see above, thus the pore volume must also be the same. See MPEP 2112.01.

**Claim 186 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP'442 in view of Buffum '724.**

EP'442 does not teach rhenium.

However rhenium is known in the art to promote silver (in combination with an alkali) epoxidation catalyst. For instance see column 5, lines 25-34 of Buffum. Thus, it would have been to one of ordinary skill in the art to use rhenium in order to promote and improve the rhenium epoxidation catalyst.

**Claim 188, is rejected under 35 U.S.C. 103(a) as being unpatentable over EP'442 further in view of Thorsteinson '140.**

EP'442 is silent in regard to the morphology required by the claim. In the event that the carrier of EP'442 does not have the required morphology, it would have been obvious to one of ordinary skill in the art to modify EP'442 in view of Thorsteinson because Thorsteinson teaches a silver catalyst supported on an alumina carrier used in the epoxidation of an olefin like the invention of EP'442. See abstract of Thorsteinson and column 8, lines 1-59. In particular, Thorsteinson teaches using a carrier comprising alumina that has [a particulate matrix of] lamellate or platelet-type (interlocking platelet) morphology. See column 8, lines 43-59. One of ordinary skill in the art would have found it obvious to substitute the alumina of Thorsteinson for the alumina of EP'442 in order to affect the predictable result or forming an epoxidation catalyst of a silver catalyst on an alumina support.

***Response to Arguments***

Applicant's arguments dated 7/24/2009 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. ZIMMER whose telephone number is (571)270-3591. The examiner can normally be reached on Monday - Friday 7:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ajz

/Steven Bos/  
Primary Examiner, Art Unit 1793